Children with Autistic Spectrum Disorders and Cochlear Implants
An Audit

This study reviewed outcomes for children who are implanted and also have a diagnosis of Autistic Spectrum Disorder. Data are presented for this cohort pre-implant and at one and three years post implant. Device use was also reviewed.

Introduction

- The presence of an additional disability does not preclude a cochlear implant, but it is likely to affect outcomes and rate of progress.

- Autistic Spectrum Disorders (ASDs) are being diagnosed in increasing numbers. The Medical Research Council (2001)[1] suggests a figure of about 60 per 10,000 children under the age of 8.

- There is a reported raised incidence of ASDs in the deaf paediatric population (Donaldson et al, 2004)[2]

- Implant centres are likely to have children with ASDs referred in greater numbers.

- Expectations can be critical for adjustment to a cochlear implant and habilitation. It is important that parents, implant centre staff and local service providers are aware of potential outcomes for this group.

Method

- Retrospective study of data on children implanted at the South of England Cochlear Implant Centre who also have a diagnosis of Autistic Spectrum Disorders

- Children must have been diagnosed with autism by a paediatrician or a local team specialising in autism

- Data was collected at pre-implant, 1 and 3 years post implant using the Meaningful Auditory Integration Scale (MAIS), Categories of Auditory Performance (CAP) and the Speech Intelligibility Rating (SIR)

Subjects

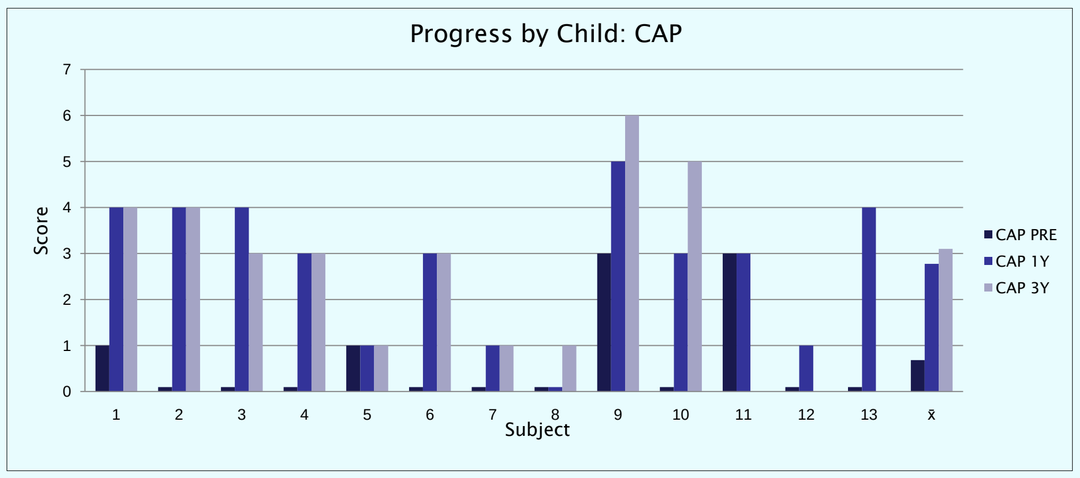
- 13 children fitted criteria
  (3 girls, 10 boys)

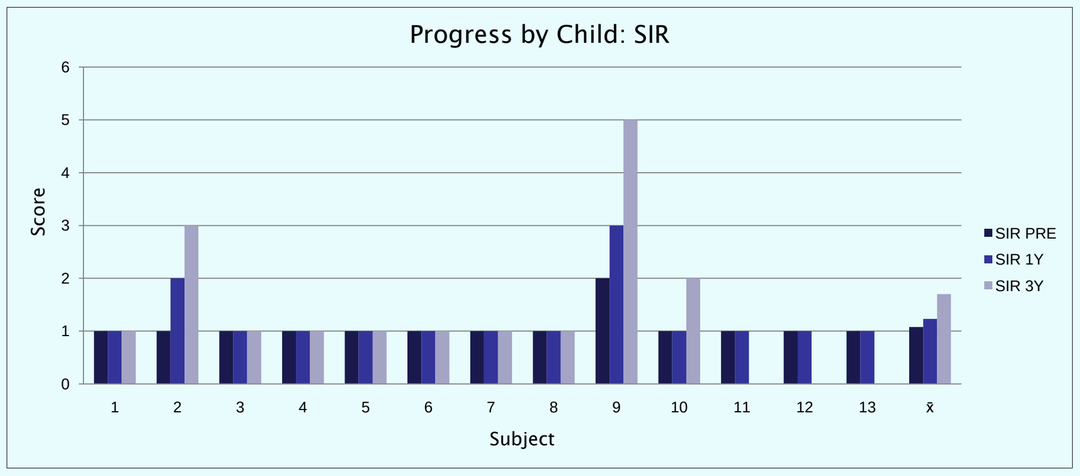
Outcomes

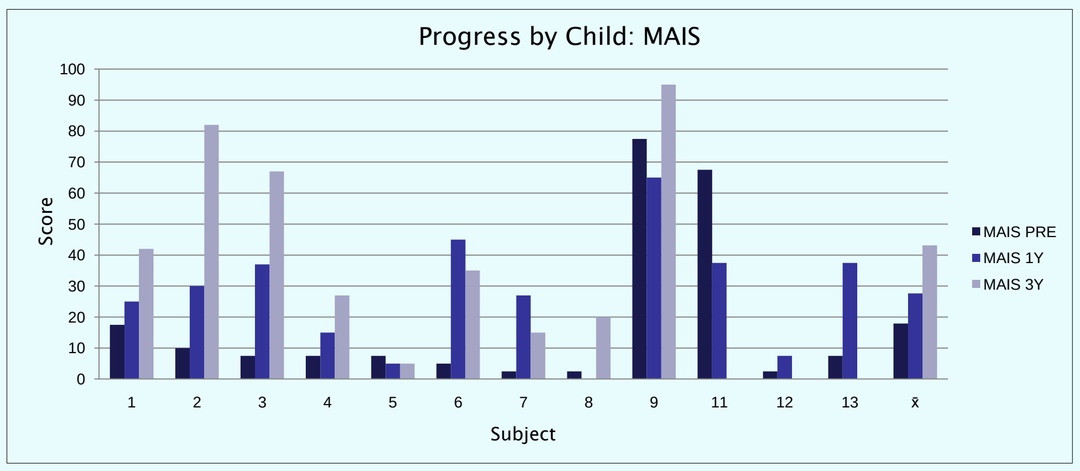
Device Use
(Question 1 on MAIS - Does the child wear the device all waking hours?)

Subject	Pre implant hearing aid use	Use of processor 1 year post	Use of processor 3 years post
1	frequently	occasionally	always
2	frequently	occasionally	always
3	frequently	frequently	frequently
4	rarely	never	rarely
5	rarely	never	never
6	rarely	rarely	always
7	rarely	always	always
8	rarely	never	frequently
9	frequently	always	always
10	not known	always	always
11	always	frequently	n/a
12	always	rarely	n/a
13	occasionally	always	n/a

Data







Conclusions

- **Progress was measurable for the ASD group on the auditory based questionnaires (MAIS and CAP)**
- **On the speech intelligibility rating scale the majority of this group remain at the pre-verbal stage at three years post implant**
- **10 of the 13 subjects are wearing their processors 'always' or 'frequently'**
- **Traditional measurements of progress may not be sensitive enough to demonstrate functional benefit**
- **Further investigations into progress on other measures is indicated**

References
[1] Medical Research Council December 2001 pp18. Review of Autism Research. Epidemiology and Causes.
[2] Donaldson, AI Heavner, KS Zwolan TA . Measuring progress in children with autism spectrum disorder who have cochlear implants. J. Arch Otolaryngol Head Neck Surg. 2004 May;130(5):666-71.

Margie Harriott, South of England Cochlear Implant Centre, (mmh@isvr.soton.ac.uk) www.soecic.org
Jill Mustard, Southern Cochlear Implant Programme, van Asch Deaf Education Centre, Sumner, Christchurch 8081, NZ
Our thanks are due to Tamara Turchett, South of England Cochlear Implant Centre, for help in data collection